

Andrews - 2005 Mazda 3/J48C Vehicle Program - DP Telephone Conference Call Notes - February 22, 2016
Hirokazu Hirabayashi(X), Yuji Kamei(X), Toshihiko Kumagai(X), Masashi Shigetoh - all from Autoliv Japan
(X) worked on J48C program

	Question/Follow up question	Original Answer/Follow up question answer
1	<p>1. What were the features of the seatbelt for the Mazda J48C program?</p> <p>Follow up 1-1) In any pre-sourcing discussion with Mazda, did Autoliv Japan discuss other seat belt retractor technologies or designs with Mazda? If yes, what were they?</p> <p>Follow up 1-2) Do we know why Mazda selected the R27LL retractor and PBP2 buckle pretensioner for this vehicle?</p>	<p>Retractor: R27LL Standard retractor with Load Limiter Buckle: PBP2 Buckle with Pyrotechnic Pretensioner</p> <p>F/U 1-1) No discussion of other seat belt retractor technology took place. Mazda came to Autoliv Japan with a predetermined/ predefined system. F/U 1-2) The Mazda 3 (J48C) vehicle platform program was a partner development activity between Ford and Mazda in Europe. Mazda selected the R27LL retractor and buckle pretensioner for front seating positions. Autoliv buckle/PBP and R27LL retractor selected because it would meet Mazda performance specifications for seat belt hardware.</p>
2	<p>2. What were the features of the seatbelt for the Mazda J48L program?</p> <p>Follow up 2-1) Did Mazda provide any reason or discussion for why they changed the seat belt system components from R27LL to R200RPLL? Why was the Buckle Pretensioner removed?</p>	<p>Retractor: R200RPLL Retractor with Load Limiter and Pyrotechnic Pretensioner Buckle: K12J Buckle with No Pyro Pretensioner</p> <p>F/U 2-1) Decision to make a seat belt change in J48L was made by Mazda. Mazda was looking for restraint system cost reduction and asked what options were available. Mazda was also looking to improve NCAP score for J48L. Autoliv provided information that retractor pretensioner with load limiter and standard buckle was less expensive than standard retractor with load limiter and pyrotechnic buckle pretensioner. Autoliv provided samples and generic test results for Mazda review and analysis and Mazda made decision to change J48L seat belt system to pretensioner retractor with load limiter and standard buckle. Autoliv Japan not aware of any change to vehicle.</p>
3	<p>3. At the time Autoliv Japan received Mazda's specifications for the J48C program, what types of torsion bars did Autoliv Japan sell?</p> <p>Follow up 3-1) Did Mazda request information on different torsion bar load levels for evaluation during the development of the seat belt system for the J48C vehicle?</p> <p>Follow up 3-2) Did Autoliv Japan provide torsion bar data or torsion bar samples in various LL levels to Mazda for evaluation?</p> <p>Follow up 3-3) When did Autoliv Japan (or NSK) start selling LL stop limited retractor designs for use in Japan? Was Mazda aware of this design during the development of the J48C or was this technology presented to Mazda or quoted to Mazda?</p>	<p>Autoliv Japan sold R200RPLL retractor (with no stopper) of Autoliv design, and Z-type (with stopper) of NSK original design to other Japanese OEM's.</p> <p>F/U 3-1) Original torsion bar load limiting level was decided (see F/U question 1-2). Multiple torsion bar load limiting values were available for R27LL retractor.</p> <p>F/U 3-2) Autoliv Japan did provide multiple torsion bar load limit level performance data from sled tests to Mazda for evaluation and Mazda simulation work. Mazda did evaluation and made selection of 2kN torsion bar.</p> <p>F/U 3-3) The NSK Z-type retractor was available in 2000. The Autoliv R200RP01LLS retractor first started production for Honda in 2002. Mazda was aware of the designs but stayed with original program content (see F/U 1-2 above) for J48C vehicle.</p>
4	<p>4. At the time Autoliv Japan received Mazda's specifications for the J48C program, what types of pretensioners did Autoliv Japan sell?</p> <p>Follow up 4-1) Retractor pretensioners, buckle pretensioners, lap pretensioners?</p>	<p>Autoliv Japan sold R200RPLL (Retractor Pyro Pretensioner with Load Limiter) of Autoliv design, and Z-type (Retractor Pyro Pretensioner with Load Limiter) of NSK original design to the other Japan OEM's.</p> <p>F/U 4-1) The two above mentioned retractor pretensioners were available for sale/use in Japan. The PBP2 buckle pretensioner used in the Mazda J48C was the first buckle pretensioner used by Autoliv Japan. There was not a lap pretensioner available for use at this time.</p>
5	<p>5. At the time Autoliv Japan received Mazda's specifications for the J48C program, did Autoliv Japan sell load limiters with a stop feature?</p> <p>Follow up 5-1) When did Autoliv Japan (or NSK) start selling LL stop limited retractor designs for use in Japan? Was Mazda aware of this design during the development of the J48C or was this technology presented to Mazda or quoted to Mazda?</p>	<p>Autoliv Japan sold Z-type retractor pretensioner which was NSK original design and was equipped with the stopper feature as standard.</p> <p>F/U 5-1) The NSK Z-type retractor pretensioner with load limiter and stop began production in 2000. The Autoliv R200RP01LLS retractor pretensioner with load limiter and stop began production in September 2002 for a Honda program. Mazda may have been aware of this technology but stayed with original program content (see F/U 1-2 above) for J48C vehicle.</p>
6	<p>6. Did any other OEM purchase from Autoliv Japan the same torsion bar that was in the J48C for its vehicle at any time? If so, who?</p> <p>Follow up 6-1) Were other Customers of Autoliv Japan using higher or lower level torsion bar values in any retractor design for their vehicles at the same time the J48C was being developed or once it began production?</p> <p>Follow up 6-2) Were other Customers using a stopper feature at the same time the J48C was being developed or once it began production?</p>	<p>Autoliv Japan sold R27LL only to Mazda. However, R200RP01LL/LLS which was equipped with same torque value torsion bar as Mazda R27LL was sold to Mitsubishi and Honda.</p> <p>F/U 6-1) Other Customers were using the same and higher level load limiting torsion bars. The Mitsubishi Outlander and Honda CRV used the same level torsion bar.</p> <p>F/U 6-2) The Honda CRV used the Autoliv designed R200RP01LLS pretensioning load limiting retractor with the same level torsion bar which started production in September 2002.</p>

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7	7. Did Autoliv Japan sell any torsion bars that had a lower deployment threshold/torque value than what was in the J48C? If so, who bought them?	The torque value of the torsion bar used in the J48C R27LL was 42Nm, and Autoliv Japan had 32-38Nm in the NSK designed Z-type retractor pretensioner with load limiter for Isuzu.
	Follow up 7-1) Do you know specifically what Customers/vehicles used the lower level torsion bar in the same time frame of 2003 - 2005 model year vehicles?	F/U 7-1) The Isuzu vehicle was the "Trooper".
8	8. Who provided the initial specification for the seatbelt?	Mazda provided the initial specification for seat belt.
	Follow up 8-1) What specifications did Mazda provide? Follow up 8-2) Did Autoliv Japan provide any input for what type of features should be included in this system level design specification? Follow up 8-3) Did Mazda ask Autoliv Japan for any input on the system level design specification?	F/U 8-1) Mazda provided the "ESG" specification, ESG-J48C57060-D, which is a vehicle system level specification that also includes program requirements for providing drawings with Mazda requirements on them. The ESG specification is negotiated between Mazda and Autoliv and once agreed is released and provided by Mazda. The "MES" specification, MES PA 57060C, is a seat belt hardware specific requirement that is created, controlled and released by Mazda and includes specific seat belt performance requirements. for the subject seat belt assembly. F/U 8-2) The system level seat belt requirement stayed with the original program content (see F/U 1-2 above) for J48C vehicle. F/U 8-3) Not on the seat belt system. Requirements for what drawings would be provided and what they looked like were discussed and included.
9	9. Who revised the specification for the seatbelt?	Mazda revised the specification for the seatbelt.
	Follow up 9-1) Does Autoliv Japan know why Mazda changed the specification of the seat belt requirements and the seat belt hardware type from the J48C vehicle to the J48L vehicle?	F/U 9-1) Autoliv Japan and Mazda do discuss the specifications to make sure there is a clear understanding of requirements, but, Mazda creates, controls and releases the performance specifications for the restraint systems components in their vehicles. See answer F/U 2-1 above.
10	10. What testing did Autoliv Japan do during the development process of the J48C seatbelt?	Autoliv Japan conducted tests which were required in MES and ESG. MES and ESG were provided by Mazda. According to Mazda requirement, Autoliv Japan conducted sled tests and submitted the test data to Mazda.
	Follow up 10-1) The ESG ...this is the Mazda seat belt system in the vehicle level engineering specification? Follow up 10-2) The MES is the Mazda component level seat belt engineering specification?	F/U 10-1) The ESG is the vehicle level requirement for the seat belt system. The ESG includes a hardware integrity sled test. F/U 10-2) The MES is the seat belt hardware level performance requirement.
11	11. Did Autoliv Japan do component level testing for the J48C seatbelt? What kind?	Autoliv Japan conducted DV and PV tests which were required in MES and ESG.
	Follow up 11-1) Was a FMVSS 209 independent test lab test from Dayton T Brown or SGS Testing requested by Autoliv Japan for the J48C seat belts?	F/U 11-1) No. Autoliv Japan ran all testing required in Mazda "ESG" and "MES" specifications. Mazda did not request an independent lab test report for J48C. For J48L Mazda requested an independent test lab report to requirements of FMVSS 209 so testing was performed by SGS Testing.
12	12. Did Autoliv Japan do in-vehicle testing for the J48C seatbelt? What kind?	Mazda did vehicle crash test. Autoliv Japan did not do them. Autoliv Japan interprets "in-vehicle" to mean vehicle level tests.
	Follow up 12-1) Did Autoliv Japan provide Mazda with seat belt assemblies that had different torsion bars for Mazda evaluation? Follow up 12-2) Did Autoliv Japan provide Mazda any seat belt retractors with a LL stop for Mazda testing/evaluation? Follow up 12-3) Did Autoliv provide Mazda any retractor other than a R27LL for Mazda tests of the J48C vehicle?	F/U 12-1) Autoliv Japan did supply samples of R27LL retractors with different torsion bar load limiting levels to Mazda for Mazda evaluation but stayed with original program content (see F/U 1-2 above) for J48C vehicle. F/U 12-2) No. See above. F/U 12-3) No. See above.
13	13. What tests were required by Mazda for the J48C seatbelt?	Test items which were included in the Mazda MES & ESG specifications, including sled tests in the ESG requirement.
	Follow up 13-1) Did Autoliv Japan run any sled tests for seat belt system development to help determine what LL torsion bar should be used or if a LL with stop should be used in the J48C vehicle? Follow up 13-2) What was the purpose of any sled testing Autoliv Japan ran for the J48C seat belt assembly?	F/U 13-1) No. Mazda defined original program content (see F/U 1-2 above) for J48C vehicle and did all system level testing. F/U 13-2) The "ESG" specification includes a seat belt hardware integrity sled test.
14	14. Did Autoliv Japan attend any testing that Mazda performed for the J48C seatbelt?	Autoliv Japan attended vehicle crash tests. However, it was just attendance, did not involve (was not involved in) the testing.
	Follow up 14-1) Was Autoliv Japan asked for input or guidance on seat belt system hardware changes like torsion bar LL level or if a stop should be used based on the Mazda vehicle crash tests Autoliv attended?	F/U 14-1) No. Only attended to watch test in case there was an issue with test parts supplied by Autoliv. There were no issues. Mazda defined hardware to use in the seat belt system.

15	15. Did Mazda provide Autoliv Japan with specific calculations, data or scores from its testing of the J48C seatbelt? What kind?	Mazda provided Autoliv some of video of vehicle crash test, vehicle pulse, dummy injury pulse
	Follow up 15-1) Did Mazda request Autoliv Japan to perform any performance analysis of the seat belt system based on the information Mazda shared from the vehicle crash tests Mazda performed for their J48C vehicle?	F/U 15-1) No. Information that was provided was for general information use only. No analysis was requested by Mazda of Autoliv. All restraint system level decisions were made by Mazda.
16	16. Who made the ultimate decision regarding what seatbelt went into the 2005 Mazda 3?	The decision was made by Mazda.
	F/U 16-1) J48C? F/U 16-2) J48L?	F/U 16-1) See F/U 1-2 above. F/U 16-2) See F/U 2-1 above.
17	17. Were there any problems or issues that happened during development of the J48C seatbelt?	Concern of noise was happened on rear seatbelt.
	Follow up 17-1) Did Mazda ever indicate at any point of the development of the J48C vehicle that the Autoliv Japan seat belt assembly Mazda specified for use in that vehicle wasn't correct, or good enough or didn't meet the Mazda MES or ESG engineering requirements?	F/U 17-1) Mazda did not indicate any seat belt system level performance issues.
18	18. Why did Mazda choose a torsion bar with a higher deployment threshold in the J48L seatbelt? Do we know?	If it is the threshold of crash sensor functioning, the responsibility belonged to OEM, and Autoliv Japan was not informed.
	Follow up 18-1) Did Mazda ever indicate why the seat belt system in the J48C was changed from a R27LL retractor with buckle pretensioner to a R200RPLL retractor with standard buckle for the J48L vehicle or why a different load limiting value was selected? Follow up 18-2) Did Mazda ever indicate it needed to change the seat belt system from the J48C vehicle to the J48L vehicle because of changes to the vehicle structure or desire to modify the occupant kinematics/motion during a crash?	F/U 18-1) See F/U 2-1 above. Mazda requested a higher load limiting value but did not explain in detail why. Mazda previously mentioned a desire to improve NCAP scores. F/U 18-2) Mazda never indicated if a vehicle change was the reason for the torsion bar load limiting level change. Mazda requested a higher level load limiter/torsion bar so Autoliv Japan supplied it.
David Prentkowski - 23-Feb-2016		

For the 2005 Mazda 3 (J48C) Seat Belt and Air Bag Program between Autoliv Japan and Mazda
Andrews – 2005 Mazda 3 / J48C Vehicle program – DP telephone Conference call notes – March 03, 2016
Hirokazu Hirabayashi, Toshihiko Kumagai, Yuji Kamei, Masashi Shigetoh – all of Autoliv Japan

- 1) What were the specific roles of Hirokazu (Hiro) Hirabayashi, Yuji Kamei and Toshihiko Kumagai of Autoliv Japan in the 2005 Mazda 3/J48C vehicle seat belt and air bag program?

Hirokazu Hirabayashi was the Autoliv Japan Program Manager responsible to coordinate activities of the Autoliv Japan engineering team working on the Mazda 3 J48C program. Hiro was responsible for the Passenger airbag and the seat belt system in the vehicle. Another team was responsible for the driver airbag and steering wheel work/interface.

Yuji Kamei was the Autoliv Japan seat belt system engineer. Yuji was responsible for insuring the Autoliv Japan seat belt components and belt assemblies met all Mazda and regulatory specifications, packaging requirements for proper fit into the vehicle and following up on both Mazda and Autoliv drawings required to release, manufacturing/production control of the product once in production.

Toshihiko (Toshi) Kumagai was the Autoliv Japan System Performance Engineer. Toshi was responsible to provide clear communication of Mazda system performance requirements to the Autoliv Japan J48C engineering team. He also helped to understand and interpret Mazda system performance test results to share that information with the rest of the Autoliv Japan J48C team.

- 2) Did ALV Japan ever specifically present alternate seat belt technologies to Mazda for the 2005 Mazda vehicle program?

Autoliv in Europe was the seat belt hardware supplier to the previous Mazda J39 program which used R200RPLL retractor technology. The supplier selection process and sourcing of business for the Mazda J48C vehicle program was managed between Ford, Mazda and Autoliv in Europe. Mazda selected the R27LL retractor, the PBP2 buckle pretensioner and the K12A buckle for use in the front seating positions of the Mazda 3/J48C vehicle. When the vehicle restraint systems application work was moved to Japan, Mazda Japan stayed with the originally selected seat belt hardware for the vehicle. When work started in Japan, Mazda started a parallel seat belt system evaluation using the R200RPLL retractor and different torsion bar load limiting levels to evaluate restraint system performance. Mazda requested R200RPLL retractors with other torsion bar load limiting levels, which Autoliv Japan supplied, for Mazda system performance testing and evaluation. This was in the December 2002 timeframe. After Mazda did their testing they made the decision to stay with the original R27LL, PBP2 and K12A buckle seat belt hardware for this vehicle (J48C).

- 3) Did ALV Japan ever specifically present the idea or make a specific product presentation to Mazda about a load limiting retractor with a stop function?

There was no discussion of a load limiter retractor with a stopper function between Autoliv Japan and Mazda for the Mazda J48C vehicle program. Mazda was aware of Autoliv/NSK retractors with a stop function due to presentations made for other programs. The NSK Z-type retractor was available with a load limiting with stop function. The R200RPLL retractor would start production in Japan for Honda in late 2002.

- 4) Did ALV Japan ever specifically present the range of torsion bar options available in ALV retractors and specifically the R27LL retractor?

Yes. Mazda was provided R27LL retractor assemblies with "low", "medium" and "high" level torsion bars for Mazda testing and evaluation for the J48C vehicle program. After Mazda testing and evaluation, Mazda selected the R27LL torsion bar load limiting level.

- 5) Did ALV Japan ever provide a copy of the R27LL Torsion bar drawing to Mazda during the development phase of the 2005 Mazda 3 vehicle program or review it in detail with Mazda so they knew what other LL TB's were available?

See question 4) above. Mazda knew other torsion bars were available and Autoliv Japan provided retractor assemblies with other load limiting levels to Mazda for Mazda testing and evaluation for use in the J48C vehicle program. Unsure if Mazda was ever provided a copy of the torsion bar drawing.

- 6) How did Mazda specifically request or require the use of the R27LL retractor and PBP2 for use in the 2005 Mazda 3 (J48C) vehicle?

During original quoting and placing of business with Autoliv and by the Mazda "ESG" specification.

- 7) The PV test report ALV Japan provided to Mazda for the 2005 Mazda 3 program includes the ESG-J48C57060-D requirement (H-1) for E/A performance of the retractor. Was this test run "statically" or dynamically by a sled test, or both?

The "H-1" requirement in the Mazda "ESG" is a static tensile test evaluation to demonstrate torsion bar load limit level. In the Mazda "ESG" in section H-2 there is a dynamic (sled test) hardware integrity test to verify no breakage or separation of seat belt parts under dynamic load.

- 8) Did ALV Japan ever run any sled tests specific to the seat belt assembly for Mazda during the development process? For what purpose?

In the Mazda "ESG" in section H-2 there is a dynamic (sled test) hardware integrity test to verify no breakage or separation of seat belt parts under dynamic load. This testing was run and reported in the PV test report.

- 9) Did Autoliv Japan ever make any recommendations to Mazda about use of retractor types? Different levels of torsion bars? Use of a LL stop device? Or did Autoliv Japan just make Mazda aware of options available and Mazda made the selections/choices?

Mazda selected the R27LL retractor, K12A buckle and PBP2 pretensioner at sourcing. Mazda requested other retractor types and torsion bar load limiting levels for evaluation once the application development program was moved to Japan. See answers to questions 2, 3, 4 and 5 above.

- 10) Did Autoliv Japan perform any system level testing in any way and provide that information to Mazda?

Autoliv Japan did not perform any vehicle occupant restraint system level testing for the J48C program. All system level performance testing was done by Mazda.

Autoliv Japan performed and reported on the testing required by Mazda per the Mazda "ESG" and "MES" specifications.

- 11) Did Autoliv Japan ever ask Mazda to include any type of warning labels to the seat belt assembly? Did Mazda ever indicate that they wanted to or should add any kind of warnings to the seat belt assembly

Mazda defined and specified^d all label information on the J48C seat belt assemblies.

- 12) Some of the top assembly drawings produced for this case have only Autoliv in the title block. Some have Mazda in the title block and Autoliv outside of the drawing frame. Why? Who provided the information to be shown on the Mazda top assembly drawing?

As part of the J48C program, Autoliv was required to create both the Mazda top assembly drawings and the Autoliv top assembly and manufacturing drawings. All drawing input for the top assembly and any changes made to the Mazda top assembly drawings are controlled and released by Mazda. Autoliv would update the Mazda and Autoliv drawings once Mazda reviewed, approved and released the engineering changes Mazda requested.

- 13) For the PV Test Data document produced by Autoliv Japan for the J48C program, it says Mazda Motor Corporation at the top left of the page. It says Client Name: Autoliv, at the top right of the page. It includes a signature/seal area at the top right. One of the seals is "Kamei". Is this Yuji Kamei? Was this testing and document performed and created by Autoliv or Mazda?

This PV test report is an Autoliv Japan document. Autoliv Japan created the test report, did the testing and formatted the test report according to Mazda requirements. The name seal/stamp are Autoliv people who reviewed and approved the test report content before delivery to Mazda.

- 14) For the DV Test Summary document produced by Autoliv Japan for the J48C program, it says J48C Design Verification Document at the top left of the page. It also says MES PA 570670C at the top left of the page. There are no person names or company names on this document. Was this testing and document performed and created by Autoliv or Mazda?

This is an Autoliv report for the Mazda J48C program, formatted per Mazda requirements and sent to Mazda.

- 15) Did Autoliv ever perform any kind of sled test or vehicle test during DV or PV to verify function of the seat belts or air bags as a system or at a component level other than what was required by the ESG/MES specifications??

No. Autoliv performed the testing required per the Mazda "ESG" and "MES" specifications and reported those results to Mazda. All system level testing and vehicle level testing was performed by Mazda.

PREPARATION

- READ INITIAL COMPLAINT / DISCLOS W/ ADOLIN COUNSEL
- VEH. INFO / PHOTOS
RV44 M357 / MFD
- REVIEW PLM
FINN DWGS
VERIFY P/N'S COATED FOR VEHICLE
DET 1557
RETR 1557
OPINION 1557
TSS BAR
- E-MAILS REQUESTING UNDERSTANDING OF P/N'S OF JP
- PHONE CALL TO JAPAN TO DISCUSS DOCUMENTS READ
TO PRODUCE FOR DISCOVERY - DWGS, TESTING, AROS, COUNCIL, JAPAN
- MFGS / DISCLOS W/ COUNSEL
- PHONE CALL MFG W/ JAPAN TO SEE IF ANY AZV JPN JAL
- REVIEWED DOCUMENTS PRODUCED BY JPN PEOPLE STILL CAL
- REVIEWED SOME OF THE DEPOSITIONS TAKEN IN CASE
- REVIEWED REVISED 30(L)(6) DEPOSITION REQUESTS
- ONCE DEPOSITION TOPICS WERE IDENTIFIED /
CONTACTED ADOLIN JAPAN TO ASK MORE SPECIFIC
QUESTIONS RELATED TO THE RETR, TSS AND
STOP FUNCTION - SEE NOTES

PREVIOUS DEPOSITIONS

RAMOS MAY 2007

ROBERTS AUGUST 2013

DAWD OCTOBER 2015

NASS - NATL AUTOMOTIVE SANDLING SYSTEM

FARS - FATALITY ANALYSIS REPORTING SYSTEM

FARS 202 INTODU CRITERIA MEASURED DURING ^{TOP} TESTING

HIC
N_{ij} TENSION COMPRESSION FLEXION
CHEST ACCEL
CHEST COMP
FEMUR WARD